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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,520	03/26/2004	Takafumi Noguchi	Q80707	7536
23373	7590	01/26/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			HUYNH, ANDY	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/809,520	<b>Applicant(s)</b> NOGUCHI, TAKAFUMI	
	<b>Examiner</b> Andy Huynh	<b>Art Unit</b> 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/26/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

Claims **1-10** are currently pending in this application is acknowledged.

### *Priority*

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) based on an application filed in JAPAN, 2003-085832 on 03/26/2003.

### *Information Disclosure Statement*

This office acknowledges receipt of the following items from the applicant: Information Disclosure Statement (IDS) filed 03/26/2004. The references cited on the PTOL 1449 form have been considered.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims **1-6 and 9-10** are rejected under 35 U.S.C. 102(e) as being anticipated by Koyama et al. (USP 6,704,335 hereinafter referred to as "Koyama").

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Regarding claims **1, 3 and 4**, Koyama discloses in Fig. 11 and the corresponding texts as set forth in column 17, lines 1-67, a light emitting diode/LED 24000 comprises:

a pair of electrodes/anode 30 and cathode 50; and

a light emitting layer/an organic light emitting layer 40 interposed between the pair of electrodes/the anode and the cathode,

wherein the light emitting layer/the organic light emitting layer has a light emitting region 40 containing a luminescent material and having a higher refractive index than air and a low refractive region/medium 90 may be a gaseous layer such as air (refractive index of 1.0) (col. 17, lines 54-56) having a lower refractive index than the light emitting region, and

at least part of an interface between the light emitting region and the low refractive region is unparallel to a plane of the electrodes/the anode and the cathode. It is inhering that the organic light emitting layer has a refractive index higher than air.

Regarding claim **2**, Koyama discloses in Fig. 11 at least part of an interface between the light emitting region and the low refractive region/the medium is perpendicular to a plane of the electrodes/the anode and the cathode.

Regarding claims **5 and 6**, Koyama discloses the refractive index of the organic light emitting layer is higher than the refractive index of air, so it is inhering that a ratio of a refractive index of the low refractive region/air region to a refractive index of the light emitting region is smaller to 1.

Regarding claim **9**, Koyama discloses in Fig. 11 the light emitting diode further comprises a hole transporting layer 70 containing a hole transporting material.

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Regarding claim 10, Koyama discloses in Fig. 3 the light emitting diode further comprises an electron transporting layer 80 containing an electron transporting material.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al. (USP 6,704,335 hereinafter referred to as "Koyama")

Koyama discloses the claimed limitations except for the light emitting layer has a thickness of 10 to 200 nm or 20 to 80 nm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to form the light emitting layer having a thickness of 10 to 200 nm or 20 to 80 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

### ***Conclusion***

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh, (571) 272-1781. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The Fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the -status of this application or proceeding should be directed to the receptionist whose phone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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01/21/05



Andy Huynh

Patent Examiner